Some parasitoid mites (Mesostigmata : Acarina) associated with Coleoptera in the Western Transvaal.

by

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There has been no comprehensive study of the parasitoid Acarina associated with beetles in South Africa. Berlese has described a few species in scattered papers (1908, 1910, 1921) and Ryke & Meyer (1957) have investigated the mites of the family Eviphididae. The present paper is based on material collected in the Western Transvaal and deals with ten species, eight of which are new to science, from the families Macrochelidae, Pachylaelaptidae and Laelaptidae. We are extremely grateful to Dr. G. O. Evans and Mr. K. H. Hyatt, both of the British Museum (Nat. Hist.), London, for their help and to Prof. J. W. Geyer of the Department of Entomology, University of Pretoria for the identification of the beetles. The type material of the new species described is deposited in the collections of the Department of Zoology of the Potchefstroom University.

Fam. MACROCHELIDAE Vitzthum

Subfam. **MACROCHELINAE** Trägårdh

Genus **Macrocheles** Latreille

Two species of this genus were described from South Africa by Berlese namely *Macrocheles hamadryas* and *M. humeralis*. For a definition of the subfamily Macrochelinae and the genus *Macrocheles* the reader is referred to Evans & Browning (1956).

Macrocheles nemontanus n.sp.

Female:

Dimensions of holotype:

Length of dorsal shield	825 μ
Breadth of dorsal shield	550 μ
Length of sternal shield	143 μ
Breadth of sternal shield (between coxae II)	165 μ
Length of ventri-anal shield	264 μ
Breadth of ventri-anal shield	253 μ
Length of leg IV (excl. ambulacrum)	1100 μ

Dorsum. The reticulated and punctuated dorsal shield (fig. 1) bears 29 pairs of setae as in *M. montanus* Willm. and *M. montivagus* (Berl.). The lateral margin, especially in the posterior half, is serrated. The setae are arranged in four series, namely dorsal (9 pairs), median (3), lateral (8) and marginal (9). The chaetotactic pattern is similar to that of *M. montanus* and, as in this species, setae D5—D7, M2—M3 and Mgl are simple. D6 is an extra pair of setae not present in the majority of the *Macrocheles* species. The other setae on the shield are not as plumose as in *M. montanus* and are only pilose distally. The vertical setae are relatively long and their bases are almost contiguous. The 18 pairs of infra-marginal setae are pilose.

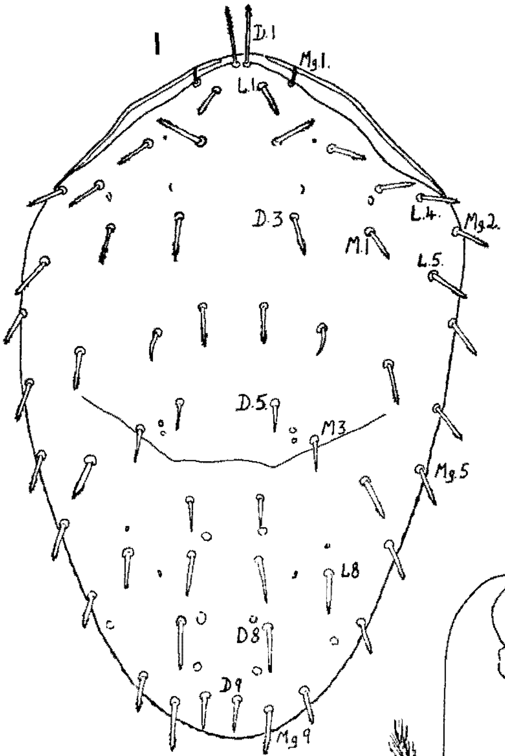
Venter (fig. 2). The sternal shield has small punctures interconnected to form punctate lines as shown in the figure. Two patches of larger punctures occur anterior to sternal setae III. The three pairs of setae are pilose distally. The metasternal shields are small and narrow and are provided with a pair of setae similar to those on the sternal and genital shields. The punctures on the genital shield form a pattern as shown in fig. 2. The lateral sclerites are relatively well sclerotized. The ventri-anal shield is slightly longer than broad and is provided with the usual three pairs of setae excluding the pair of para-anals and the post-anal seta. The shield is ornamented by means of punctate lines as illustrated in the figure. The tritosternum (fig. 3) is typical of the macrochelids in having a base longer than wide and two long pilose lacinae. The stigma is situated between coxae III and IV. The peritremes extend to the level anterior of coxae I. In the region of the stigma each peritreme forms the characteristic U-shaped loop.

Gnathosoma. The hypostomal setae (fig. 4) are simple. The internal posterior rostral setae are nearly three times longer than the externals and the capitular setae. The capitular groove has six transverse rows of denticles. The corniculi are well-developed and the internal malae are pilose. The latter are covered dorsally by a serrated ligula. The salivary styli are of moderate length. The trochanter of the palp bears a simple and a rod-like seta. The palp tarsus is provided with a three-pronged seta and a long rod-like seta distally. This is characteristic of the macrochelines associated with beetles. The tectum (fig. 5) consists of three anteriorly directed processes. The lateral processes are smooth and bifurcate distally. The median process is setose and is also divided distally. The base of the tectum is denticulate. The chelicerae (fig. 6) are chelate-dentate, the movable digit bearing two small teeth and a large tooth. The single large tooth of the fixed digit is situated posterior to the pilus dentilis. The dorsal seta is spatulate and the ventral setae are well-developed as shown in the figure.

EXPLANATIONS OF FIGURES.

Figs. 1-7. *Macrocheles nemontanus*, n.sp., female.

Fig. 1 dorsum; fig. 2 shields, venter; fig. 3 tritosternum; fig. 4 hypostome; fig. 5 tectum; fig. 6 chelicerae; fig. 7 tarsus II.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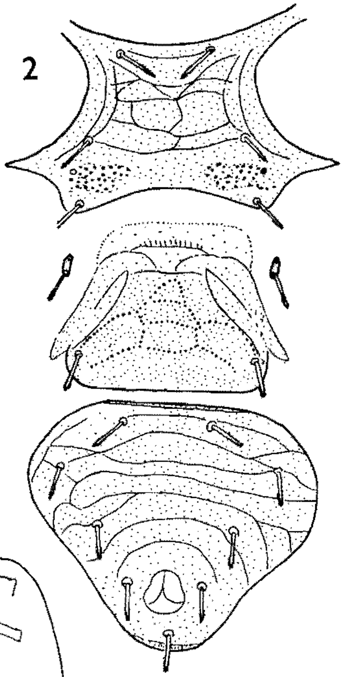
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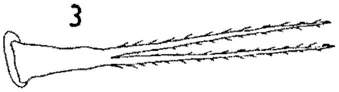
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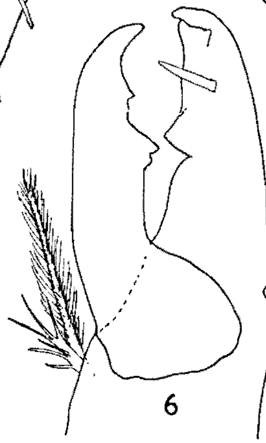
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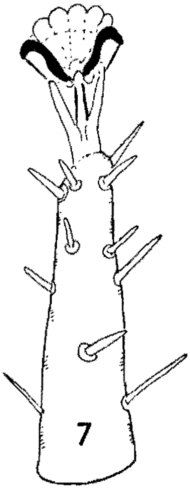
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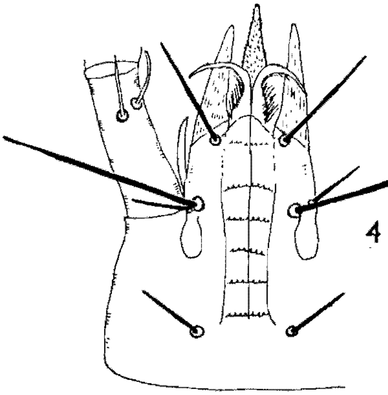
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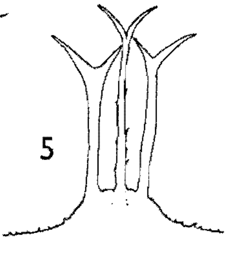
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Legs. The ambulacral apparatus present on legs II-IV are well-developed. Most of the setae on tarsus II (fig. 7) are spine-like. Other setae on the legs are pilose or simple.

Hosts and localities. Holotype and paratype (12) females off *Heliocopris gigas* L., Potchefstroom, February 1953; 2 paratype females off *Copris elphanor* Kling, Potchefstroom, November 1952; 4 paratype females off *Scarabaeus funebris* Boh., Leeuwdoornstad, January 1953; 2 paratype females off *Oryctes boas* F., Bloemhof, November 1953.

Macrocheles transvaalensis n.sp.

Female:

Dimensions:	Length of dorsal shield	946 μ
	Breadth of dorsal shield	605 μ
	Length of sternal shield	176 μ
	Breadth of sternal shield	165 μ
	Length of ventri-anal shield	275 μ
	Breadth of ventri-anal shield	231 μ
	Length of leg IV	1265 μ

Dorsum. Dorsal shield (fig. 8) with the normal 28 pairs of setae of which 8 pairs are dorsal, 3 median, 8 lateral and 9 marginal. The vertical setae are slightly pilose distally. Setae D4—6, M2—3 and Mgl are simple. D8 are short and serrate. The other setae on the dorsal shield as well as the infra-marginal setae are all pilose distally. In the species which have 8 pairs of setae in the dorsal series D8 is homologous with the D9 pair of those with 9 pairs of dorsals.

Venter (fig. 9). The setae on the venter are simple. The punctate lines on the sternal shield are shown in the figure. The posterior third of the shield is without these lines. The sternal setae are relatively long. The metasternal shields are small and each is provided with a long seta. No punctures can be observed on the genital and ventri-anal shields. The ventri-anal shield is longer than broad and bears the usual number of setae. The tritosternum, peritreme and stigma are normal. The setae on the ventral interscutal membrane, with the exception of the anterior pair, are pilose. The metapodal plates are small and roundish.

Gnathosoma. The hypostome is basically similar to that of *Macrocheles nemontanus* except that the salivary styli are longer in the present species.

EXPLANATIONS OF FIGURES.

Figs. 8-12. *Macrocheles transvaalensis,* n.sp., female.
Fig. 8 dorsum; fig. 9 shields venter; fig. 10 tectum; fig. 11 chelicerae; fig. 12 tarsus II.

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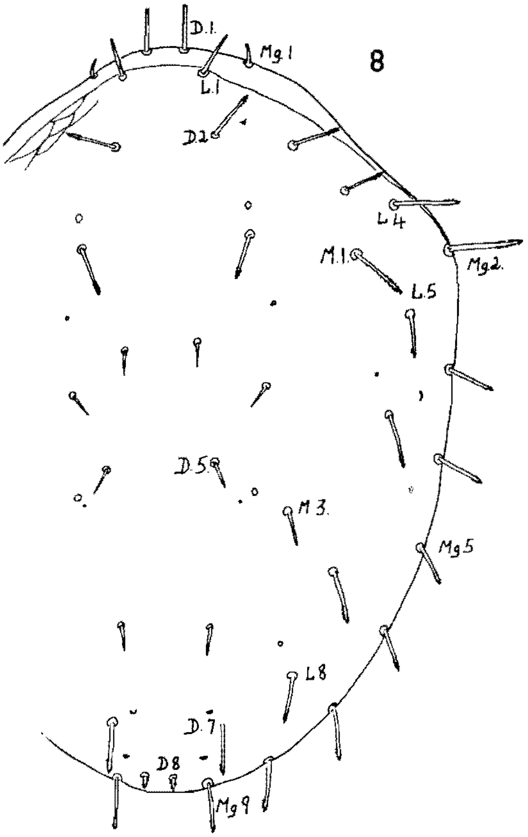

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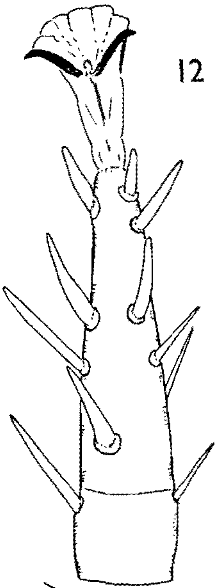

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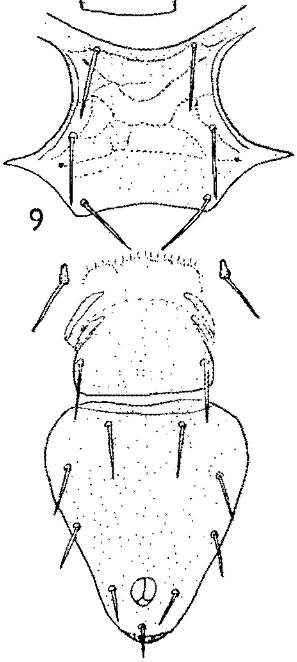

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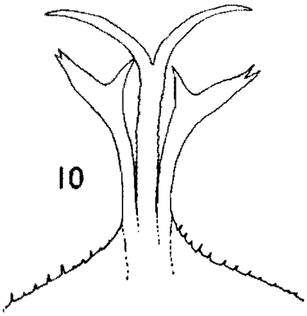

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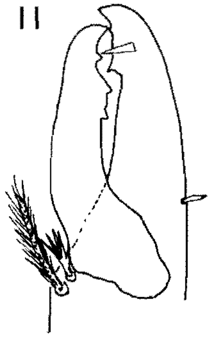


The distal rod-like seta on the palp tarsus is relatively short. The three processes of the tectum (fig. 10) are all divided distally. The external branches of both the lateral processes are bifurcated at their tips. The median branch is serrate and is joined by the lateral processes anterior to the denticulate base. The movable digit of the chelicera is tridentate and the fixed digit unidentate (fig. 11). The dorsal seta is spatulate.

Legs. The spine-like setae on tarsus II (fig. 12) are long and prominent. Some of these approach a spur-like condition. The setae on the other legs are mostly long and spine-like or pilose distally.

Host and locality. Holotype female off *Heliocopris hamadryas* Potchefstroom, March 1953.

Macrocheles neovernalis n.sp.

Female:

Dimensions:		
	Length of dorsal shield	650 μ
	Breadth of dorsal shield	363 μ
	Length of sternal shield	154 μ
	Breadth of sternal shield	121 μ
	Length of ventri-anal shield	203 μ
	Breadth of ventri-anal shield	198 μ
	Length of leg IV	640 μ

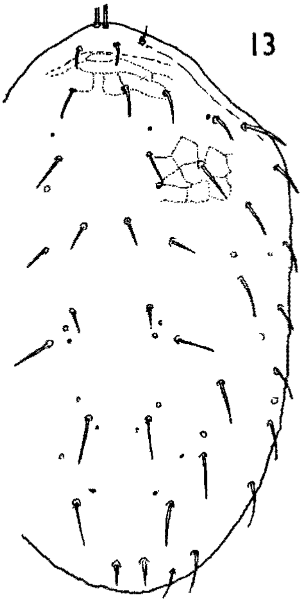
Dorsum. The reticulated dorsal shield (fig. 13) bears 28 pairs of setae arranged as in *Macrocheles transvaalensis.* The vertical setae (fig. 14) are pilose only on the distal tips. Setae D8 are slightly pectinated. The other setae are simple. The infra-marginal setae are similar to those on the dorsal shield.

Venter. All the setae on the venter (fig. 15) are simple. The sternal shield is basically similar to that of *M. vernalis* Berl. The setae are shorter than those of the latter and the transverse punctate line between setae II is not prominent. This line and the other punctate lines on the sternal shield are illustrated in fig. 15. The metasternal shields are small and oblong. The genital shield has a punctate line in the form of an inverted V. The ventri-anal shield is slightly longer than broad. The punctate lines are shown in the figure. Tritosternum, peritreme and stigma similar to that of *vernalis.* The metapodal plates are irregular in shape.

EXPLANATIONS OF FIGURES.

Figs. 13-18. *Macrocheles neovernalis,* n.sp., female.

Fig. 13 dorsum; fig. 14 vertical setae; fig. 15 shields venter; fig. 16 tectum; fig. 17 chelicerae; fig. 18 tarsus II.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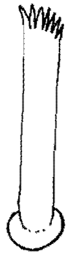
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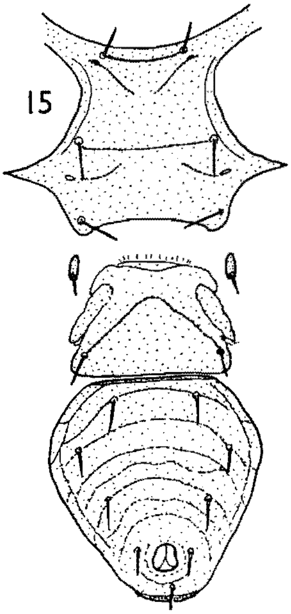
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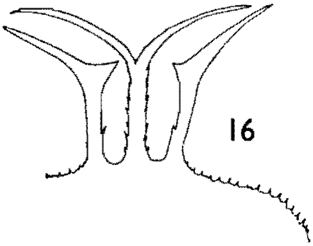
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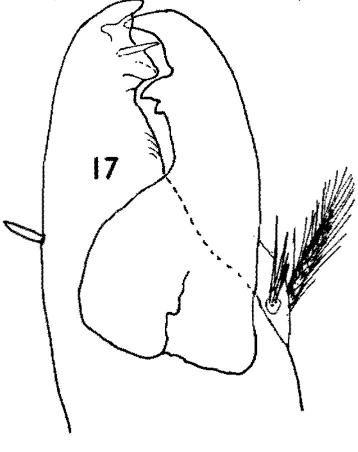
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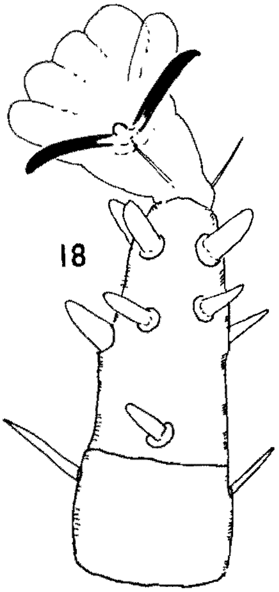
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Gnathosoma. Basically the same as that of the species described above. The tectum is shaped as shown in fig. 16. The fixed digit of the chelicera provided with a single large tooth and the movable digit with a large and a small one (fig. 17).

Legs. Setae on the legs simple, spine-like or transformed into spurs as on tarsus II (fig. 18). Ambulacral apparatus well-developed on legs II-IV.

Host and locality. Holotype female off *Heliocopris hamadryas,* Potchefstroom, February 1953.

Macrocheles merdarius africanus n. subsp.

This form differs from *M. merdarius* Berl. in its dimensions, ornamentation and other small characters but probably not sufficiently to justify the erection of a new species for it; therefore it is treated here as a new subspecies.

Female:

Dimensions:	Length of dorsal shield	605 μ
	Breadth of dorsal shield	308 μ
	Length of sternal shield	145 μ
	Breadth of sternal shield	100 μ
	Length of ventri-anal shield	176 μ
	Breadth of ventri-anal shield	132 μ
	Length of leg IV	572 μ

This is a slender mite with broad shoulders.

Dorsum. The 28 pairs of dorsal setae are relatively short and simple (fig. 19). Vertical setae almost spine-like. Setae D8 slightly pectinated. Dorsal shield reticulated by means of punctate lines. Margin of the shield slightly undulating.

Venter (fig. 20). Breadth of the sternal shield between coxae II approximately two-thirds of its length. The pattern formed by the punctures is shown in the figure. The setae are simple. Metasternal shields small and oblong. Genital shield with two longitudinal lines near the lateral margin. Genital and ventri-anal shields practically contiguous except for a concave depression in the anterior margin of the latter. No punctate lines could be distinguished on the ventri-anal shield. The setae on the ventral interscutal membrane are simple.

Gnathosoma. Basically as in the other species. The fixed digit of the chelicera with a large sharp and a small blunt tooth. The movable digit is

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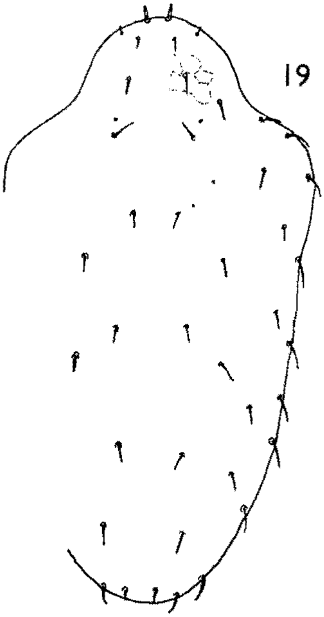
EXPLANATIONS OF FIGURES.

Figs. 19-22. *Macrocheles merdarius africanus,* n. subsp., female. Fig. 19 dorsum; fig. 20 shields venter; fig. 21 chelicerae; fig. 22 tarsus II.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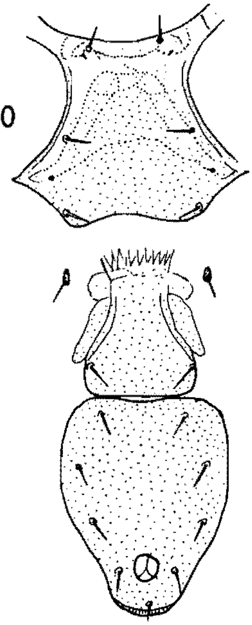
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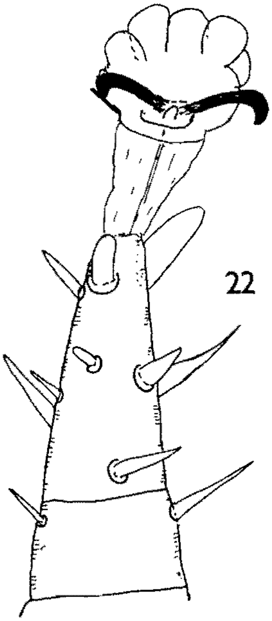
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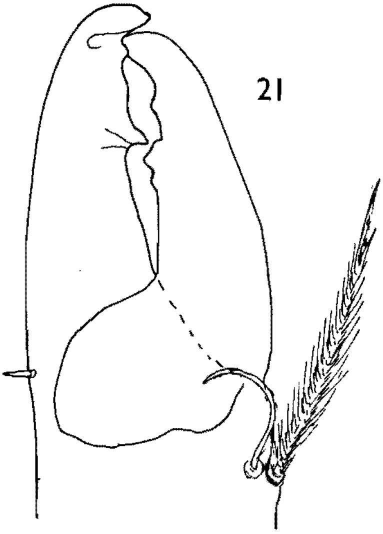
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tridentate, one large and two small teeth. The dorsal seta is lanceolate. Ventral setae as shown in fig. 21.

Legs. The legs are normal and with ambulacral apparatus on legs II-IV. Setae on tarsus II simple, spine-like or transformed into spurs (fig. 22).

Hosts and localities. Holotype female and paratype female off *Oryctes boas*, Bloemhof, January 1953; 2 paratype females off *Pachnoda rufa* (Des.), Fochville, February 1953; 4 paratype females off *Heliocopris gigas* L., February 1954, Potchefstroom; 2 paratype females off *Heliocopris hamadryas*, Potchefstroom, March 1953.

Macrocheles glaber (Müller).

This is a cosmopolitan species. For its description the reader is referred to Evans and Browning (1956).

Hosts and localities. 2 females off *Hister latipes* Palis, Leeuwdoornstad, January 1953; 3 females off *Onthophagus gazella* Fal., Potchefstroom, December 1952; 3 females off *Onitis sphinx* Fahr., Potchefstroom, February 1953; 5 females off *Oniticellus* sp., Fochville, February 1953.

Macrocheles latisternus n.sp.

A striking feature of this species is the broad and short sternal shield.

Female:

Dimensions:	Length of dorsal shield	715 μ
	Breadth of dorsal shield	495 μ
	Length of sternal shield	115 μ
	Breadth of sternal shield	187 μ
	Length of ventri-anal shield	275 μ
	Breadth of ventri-anal shield	264 μ
	Length of leg IV	858 μ

Dorsum. The 28 pairs of setae on the dorsal shield (fig. 23) are arranged in the usual pattern. Mgl and the setae in the middle of the shield are simple. The other setae, including the verticals, are slightly pilose at the distal tips. Exceptions are setae D8 which are barbed as shown in fig. 24. The inframarginal setae are simple or slightly pilose distally.

Venter (fig. 25). The sternal shield is almost twice as broad as long. The shield is ornamented with a few punctated lines. The line running between

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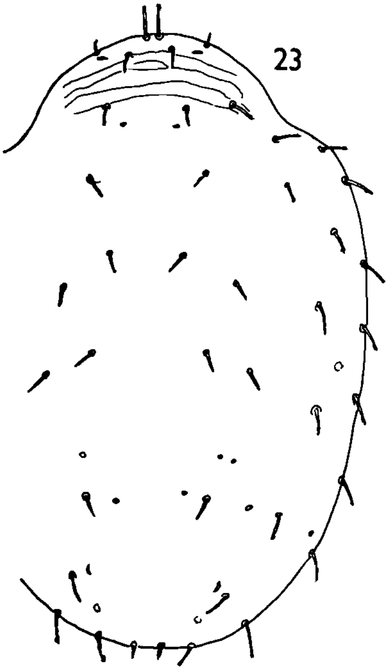
EXPLANATIONS OF FIGURES.

Figs. 23-28. *Macrocheles latisternus*, n.sp., female.

Fig. 23 dorsum; fig. 24 seta D 8; fig. 25 shields venter; fig. 26 tectum; fig. 27 chelicerae; fig. 28 tarsus II.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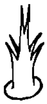
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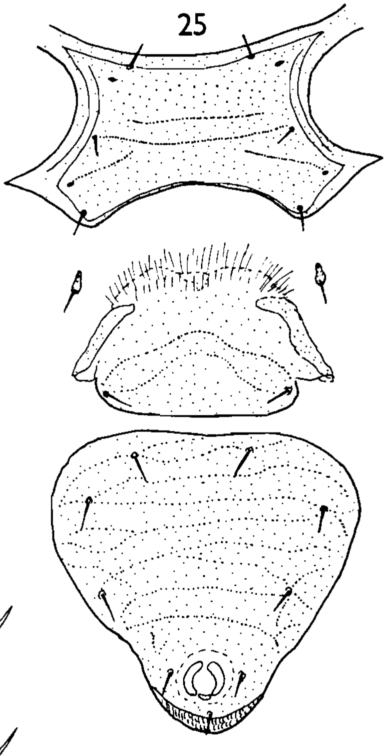
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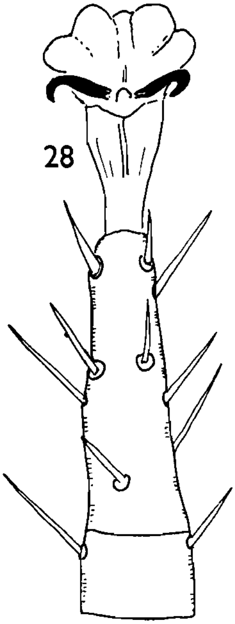
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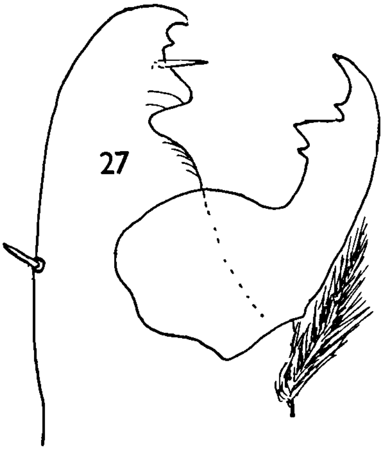
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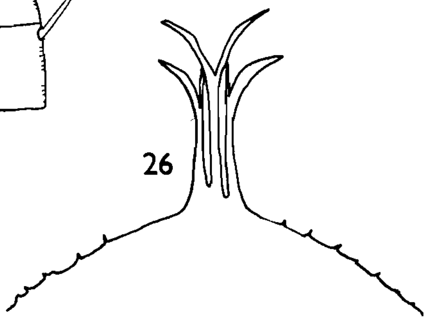
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setae II is prominent. The metasternal shields are small and more or less pear-shaped. The two punctate lines on the genital shield run almost parallel. The ventri-anal shield is slightly longer than broad. The pattern of lines is illustrated in fig. 25. The setae on the ventral interscutal membrane are simple or very slightly pilose at the tips.

Gnathosoma. The hypostome is similar to that of the other species of *Macrocheles* described. The shape of the tectum is shown in fig. 26. The movable digit of the chelicera is tridentate and the fixed digit bidentate (fig. 27).

Legs. The setae on the legs are simple or slightly pectinate. There are no spine-like setae on tarsus II (fig. 28).

Host and locality. Holotype female and two paratype females off *Onitis* sp., Fochville, February 1953.

Genus **Holostaspella** Berlese.

The genus *Holostaspella* can be distinguished from *Macrocheles* by means of the following characteristics: The vertical setae are situated on an anterior projection of the dorsal shield; the femur of leg II is armed with spurs; the ventri-anal shield may bear 3 or 4 pairs of pre-anal setae.

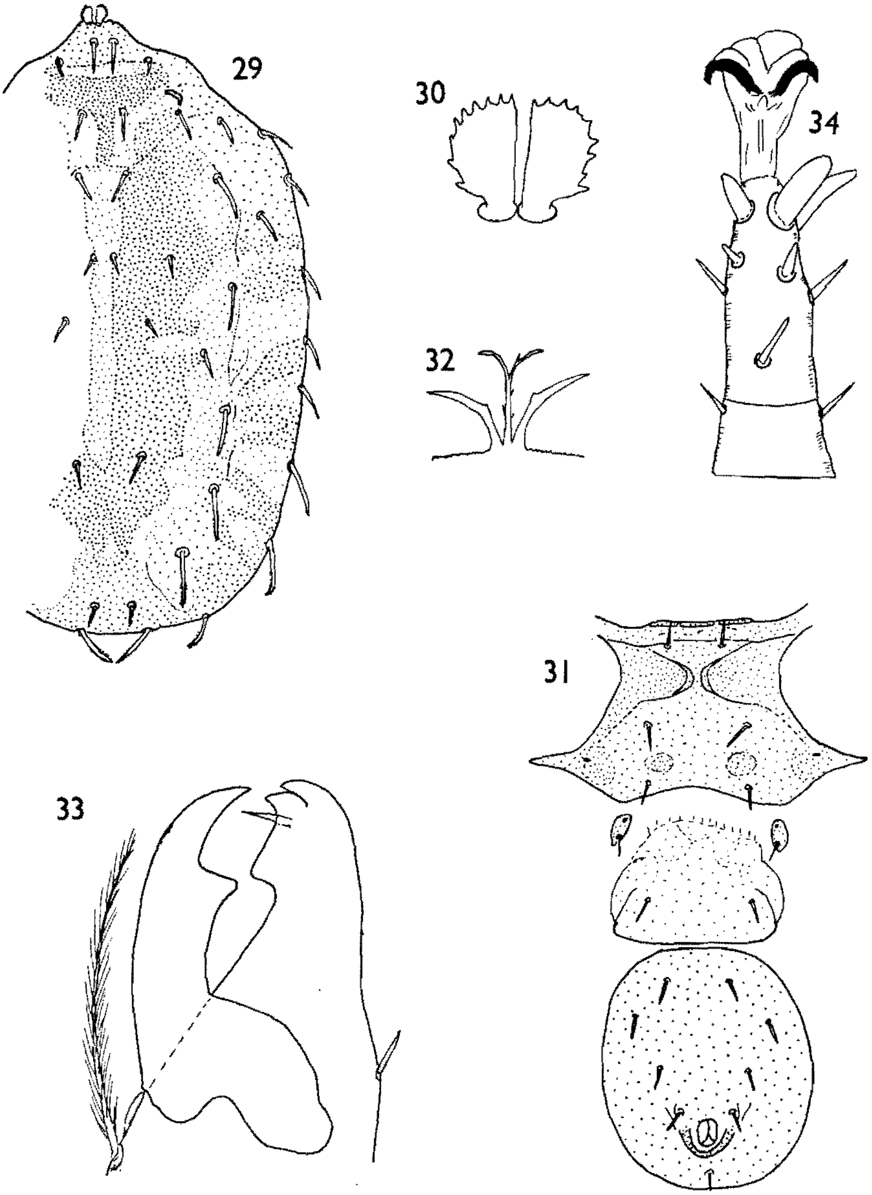
Holostaspella caelata Berlese.

Female:

Dimensions:	Length of dorsal shield	572 μ
	Breadth of dorsal shield	341 μ
	Length of sternal shield	126 μ
	Breadth of sternal shield	110 μ
	Length of ventri-anal shield	181 μ
	Breadth of ventri-anal shield	148 μ
	Length of leg IV	440 μ

Dorsum. The dorsal shield (fig. 29) bears 28 pairs of setae. Most of the setae are slightly flattened. The setae on the posterior third of the shield are pilose distally. The vertical setae (fig. 30) are broad with serrate lateral margins and are situated on an outgrowth of the shield. The surface of the shield is finely ornamented as illustrated in fig. 29. The infra-marginal setae are, with a few exceptions, pectinated.

Venter (fig. 31). The sternal shield has a characteristic X-shaped ornamentation in its anterior half. The usual three pairs of simple setae are present. The free metasternal plates are each provided with a seta and a conspicuous pore. The truncated posterior margin of the genital shield lies in close proximity to the anterior margin of the ventri-anal. The latter is almost round in shape and slightly longer than broad. A semi-circular



Figs. 29-34. *Holostaspella caelata* Berlese, female.
Fig. 29 dorsum; fig. 30 vertical setae; fig. 31 shields venter; fig. 32 tectum; fig. 33 chelicerae; fig. 34 tarsus II.

sclerotization occurs posterior to the anus. Most of the setae on the ventral interscutal membrane are pectinated.

Gnathosoma. The hypostome is normal for the Macrochelinae. The shape of the tectum is shown in fig. 32. The chelicerae are basically similar to those of the genus *Macrocheles.* The movable digit bears one large tooth whereas the fixed digit is bidentate (fig. 33). The specialized seta on the palp tarsus is three-pronged.

Legs. As in other known species of *Holostaspella* the femur of leg II is armed with spurs. (fig. 34). Tarsus II is provided with prominent spurs. The setae on the legs are simple, setose or spine-like. The ambulacral apparatus is absent on leg I. The claws and pulvilli are well-developed on legs II-IV.

Host and locality. Two females off *Heliocopris gigas,* Potchefstroom, February 1953. The type, described by Berlese, was found on *Heliocopris hamadryas* in the "Cape of Good Hope".

Fam. PACHYLAELAPTIDAE Vitzthum.

Genus **Pachylaelaps** Berlese.

Three species of this genus are known to occur in South Africa namely *Pachylaelaps australis* and *P. falculiger* Berlese 1910 and *P. brevis* Berlese 1921. For a definition of the family and the genus the reader is referred to Evans and Hyatt (1956).

Pachylaelaps heliocopridis n.sp.

Female:

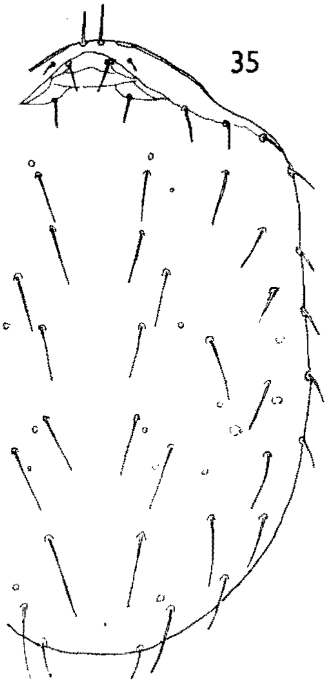
Dimensions:	Length of dorsal shield	506 μ
	Breadth of dorsal shield	312 μ
	Length of anal shield	57 μ
	Breadth of anal shield	88 μ
	Length of leg I	484 μ
	Length of leg IV	473 μ

Dorsum: The dorsal shield is provided with 30 pairs of simple setae of which 10 pairs are dorsal, 3 median, 11 lateral and 6 marginal. The chaetotaxy of the shield is shown in fig. 35.

EXPLANATIONS OF FIGURES.

Figs. 35-40. *Pachylaelaps heliocopridis,* n.sp., female.

Fig. 35 dorsum; fig. 36 venter; fig. 37 hypostome; fig. 38 tectum; fig. 39 chelicerae; fig. 40 tarsus II.



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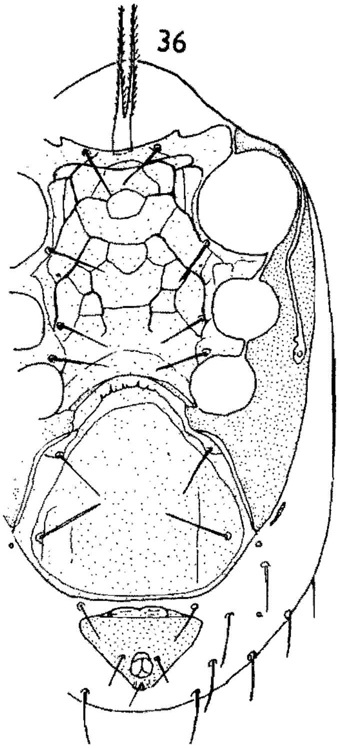

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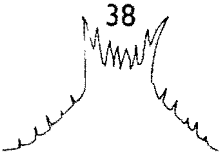

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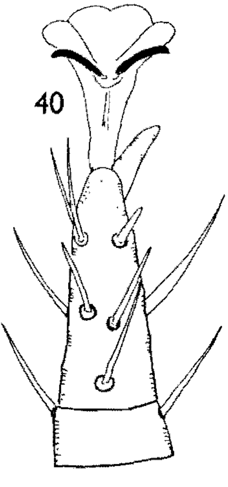

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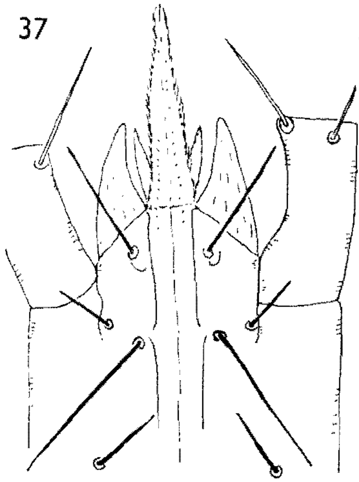

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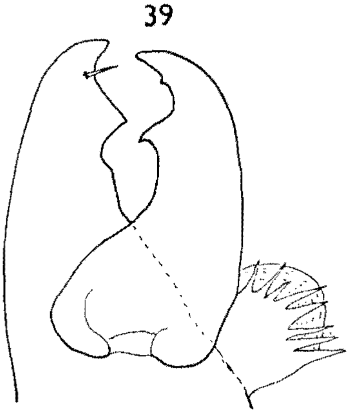

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Venter (fig. 36). The fused sternal-metasternal shield is reticulated as illustrated in the figure. It bears four pairs of moderately long simple setae. The genito-ventral shield is not reticulated and bears two pairs of setae. The triangular-shaped non-reticulated anal shield bears the usual three setae. The metapodal plates are small and elongate. The 8 pairs of setae on the ventral interscutal membrane are simple. One pair of these setae lies between the anal and genito-ventral shields. The podal-peritrematal shield extends well beyond coxa IV and flanks the genito-ventral shield. It tapers posteriorly and at its extreme hind margin lies contiguous with the latter shield. The stigma is situated in a line with the anterior margin of coxa IV. Anteriorly the peritreme streches to a position near the bases of the vertical setae. The tritosternum has a relatively narrow base, the proximal part of which is hidden under the anterior edge of the sternal shield. The two pilose lacinae are more than two times longer than the base.

Gnathosoma. (fig. 37). The hypostome bears the normal 4 pairs of setae of which the internal posterior rostral setae are the longest. The corniculi are relatively short and stout. The tectum is shown in fig. 38. The chelicerae are chelate-dentate. The movable digit bears one well-developed and a small tooth. The fixed digit is provided with a single large tooth in addition to the pilus dentilis. (fig. 39). The specialized seta on the palp tarsus is three-pronged.

Legs. Tarsus II (fig. 40) bears a large conical spur distally. All the legs are provided with an ambulacrum and claws. The setae on the legs are simple.

Host and locality. Holotype and paratype female off *Heliocopris gigas*, Potchefstroom, February 1953.

Pachylaelaps ambulacralis n.sp.

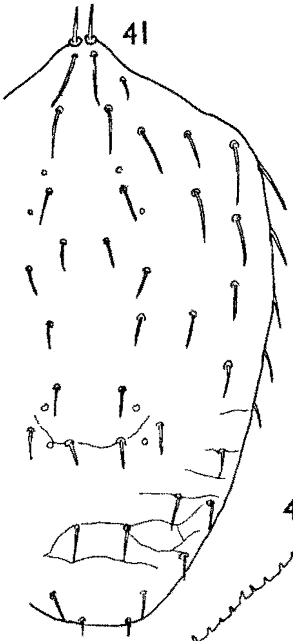
Female:

Dimensions:	Length of dorsal shield	693 μ
	Breadth of dorsal shield	429 μ
	Length of anal shield	82 μ
	Breadth of anal shield	132 μ
	Length of leg I	594 μ
	Length of leg IV	693 μ

EXPLANATIONS OF FIGURES.

Figs. 41-50. *Pachylaelaps ambulacralis*, n.sp.

Fig. 41 dorsum female; fig. 42 venter female; fig. 43 hypostome female; fig. 44 tectum female; fig. 45 chelicerae female; fig. 46 ambulacral apparatus tarsus I female; fig. 47 tarsus II female; fig. 48 dorsum deutonymph; fig. 49 venter deutonymph; fig. 50 ambulacral apparatus tarsus I deutonymph.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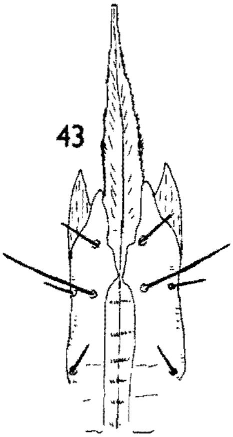
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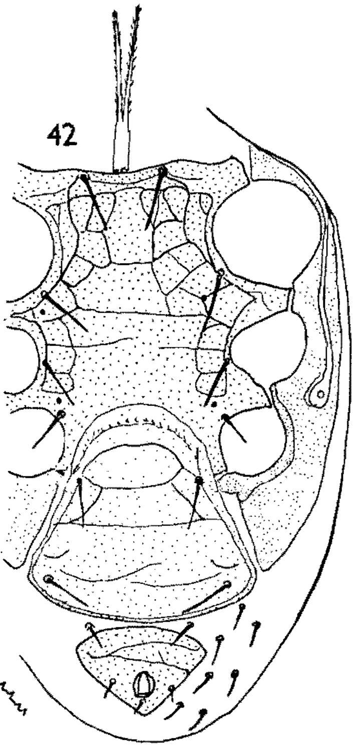
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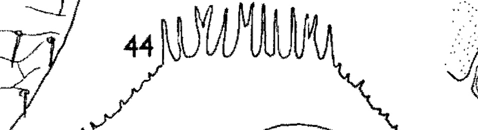
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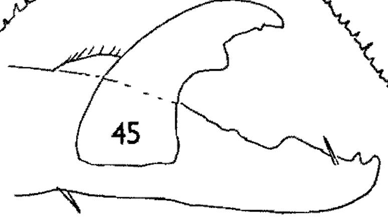
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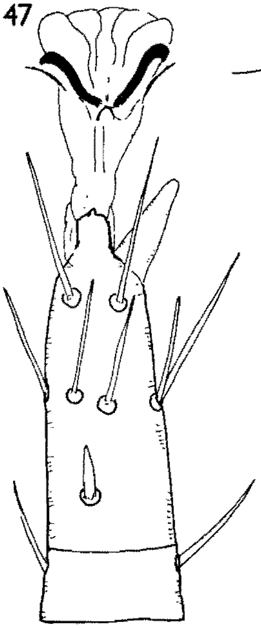
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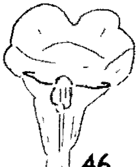
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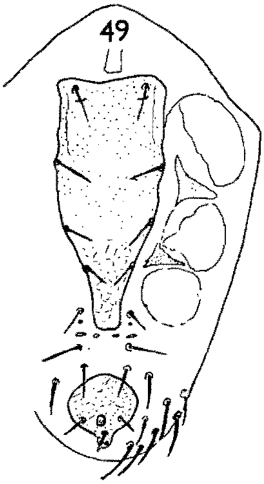
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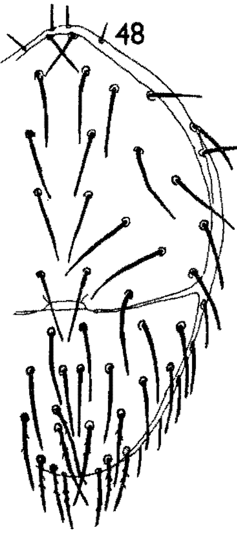
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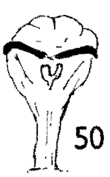
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Dorsum. Dorsal shield (fig. 41) with 31 pairs of simple setae arranged in four series comprising 10 dorsals, 4 medians, 11 laterals and 6 marginals. As in *P. brevis* the vertical setae are situated on an anterior projection of the dorsal shield. The dorsal setae are shorter than those of *brevis*. The distribution of the setae is shown in the figure.

Venter (fig. 42). The sternal-metasternal shield is reticulated as illustrated in the figure. The 4 pairs of setae are moderately long. The genito-ventral and anal shields each have a few ornamental lines. The triangular-shaped anal shield is rounded anteriorly. The stigma is situated in a line with the space between coxae III and IV. The podal-peritrematal shield is not fused with the ventral shield. The tritosternum is normal.

Gnathosoma. The hypostome (fig. 43) is basically similar to those of other *Pachylaelaps* species. The internal posterior rostral setae are approximately two times longer than the rostrals. The internal malae are pilose. The long ligula projects far forwards. The tectum (fig. 44) is provided with long denticles anteriorly and short denticles on the lateral margins. The chelicerae (fig. 45) are typical of *Pachylaelaps*. The fixed digit is provided with a large tooth and 2-3 smaller teeth. The movable digit is bidentate, the anterior tooth being small. The palp is normal.

Legs. Leg I is provided with a pulvillus but the claw is vestigial (fig. 46). Tarsus II (fig. 47) bears a large conical spur. The ambulacral apparatus is situated on a slender anterior continuation of the tarsus.

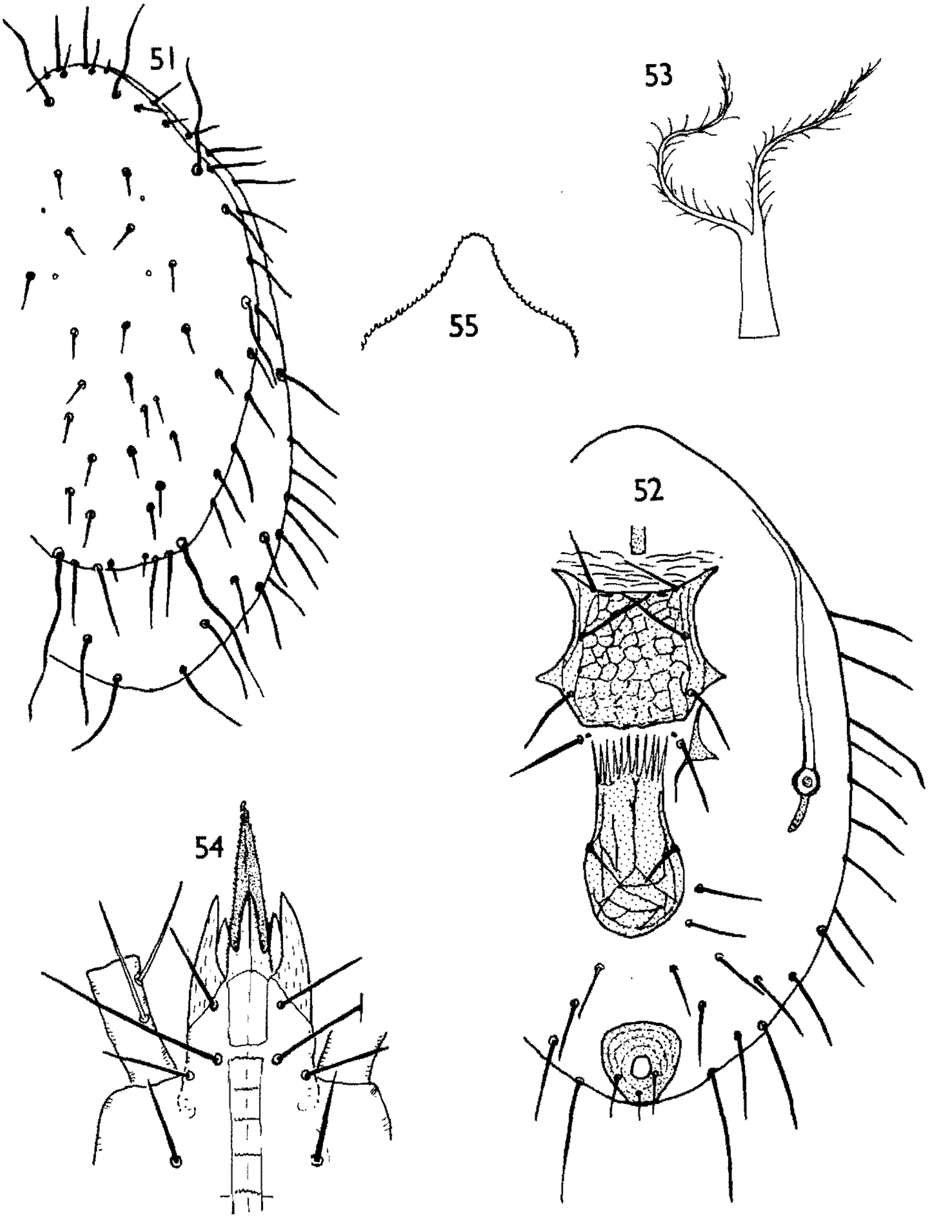
Deutonymph:

Dimensions:	Length of dorsal shield	539 μ
	Breadth of dorsal shield	330 μ
	Length of "sternal" shield	418 μ
	Breadth of "sternal" shield	121 μ
	Length of anal shield	66 μ
	Breadth of anal shield	61 μ

Dorsum. The dorsal shield (fig. 48) is provided with relatively long setae. The vertical setae are not situated on an anterior projection. Many of the setae on the posterior part of the dorsal shield are slightly pilose proximally. The shield has a lateral incision (as is the case in the other known deutonymphs of the Pachylaelaptidae) on both sides. The incisions almost meet in the middle line.

Venter. The sternal-metasternal-genital shield (fig. 49) bears 4 pairs of simple setae. Two pairs of small platelets occur behind the posterior margin of the "sternal" shield. The posterior part of the shield as well as the anal shield are faintly reticulated. The distribution of the setae on the interscutal membrane is shown in fig. 49.

Gnathosoma. Basically the same as that of the female.



Figs. 51-55. *Coleolaelaps boas,* n.sp. female.
Fig. 51 dorsum; fig. 52 venter; fig. 53 tritosternum; fig. 54 hypostome; fig. 55 tectum.

Legs. Similar to those of the female with the exception of the presence of a relatively well-developed claw on tarsus I (fig. 50).

Hosts and localities. Holotype female and morphotype deutonymph off *Heliocopris hamadryas,* Potchefstroom, March 1953; 1 paratype female off *Onthophagus gazella* Fahr., Potchefstroom, December 1952; 7 paratype females, 1 deutonymph off *Heliocopris gigas,* Potchefstroom, May 1953.

Fam. LAELAPTIDAE Berlese

Subfam. LAELAPTINAE Berlese

Genus **Coleolaelaps** Berlese

This Hypoaspis-like genus occurring on beetles, can be recognized by the presence of long sinuous setae on the dorsum and on one or more segments of the legs.

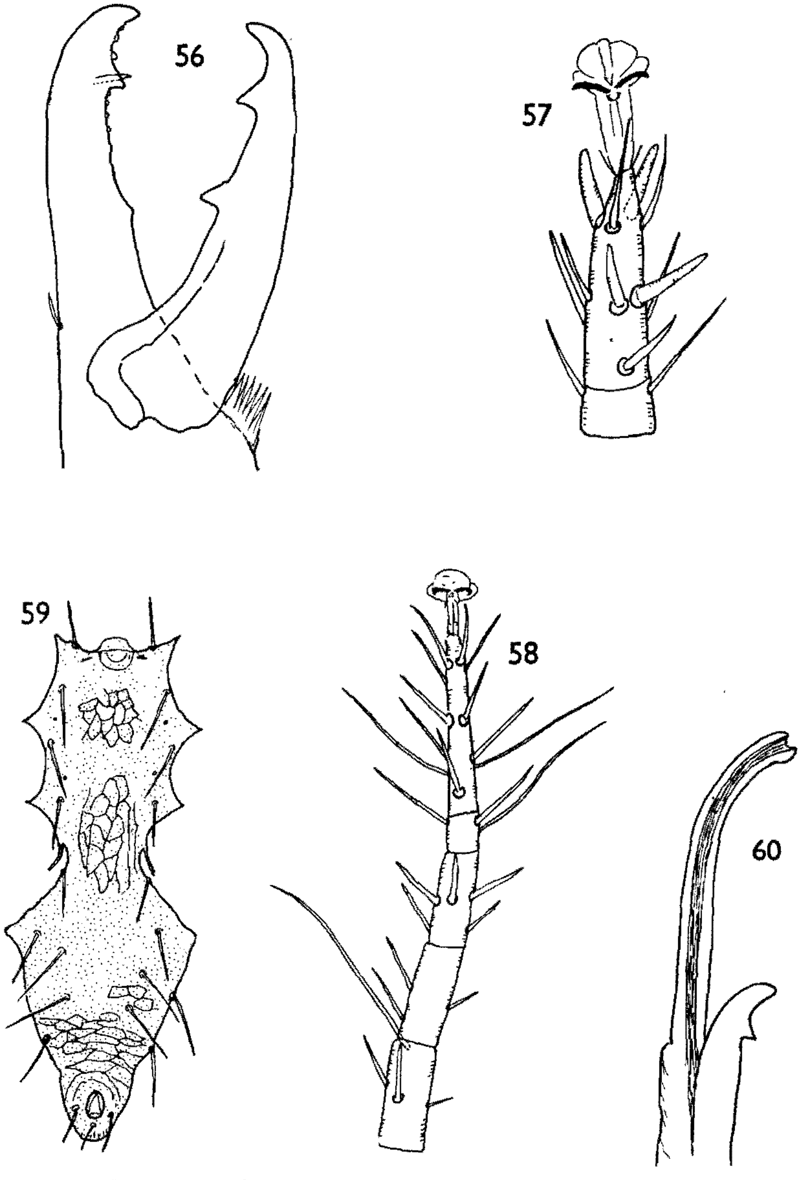
Coleolaelaps boas n.sp.

Female:

Dimensions:		
	Length of dorsal shield	869 μ
	Breadth of dorsal shield	550 μ
	Length of sternal shield	190 μ
	Breadth of sternal shield	165 μ
	Length of anal shield	124 μ
	Breadth of anal shield	110 μ
	Length of leg IV	1034 μ

Dorsum (fig. 51). The dorsal shield is provided with 36 pairs of simple setae. A striking feature is the presence of five pairs of relatively long undulating setae. The chaetotaxy resembles that of *Coleolaelaps rhinocerotis* Womersley but the more anterior 4 pairs of long setae are not as long as in the latter species. The pair in the postero-lateral corners of the dorsal plate are the longest. The shield does not cover the entire dorsum and a large portion of the dorsal interscutal membrane, bearing moderately long, simple setae, can be observed. It is faintly reticulate and shows patches of scale-like sclerotizations. The distribution of the setae on the dorsum is illustrated in the figure.

Venter (fig. 52). The sternal shield is faintly reticulated and bears 3 pairs of strong simple setae of moderate length. The metasternal shields are minute and without setae. The metasternal setae are situated on the integument. The genital shield is flask-shaped and bears one pair of setae. The ornamental lines on the shield are shown in fig. 52. The anal shield is more or less triangular in shape and is ornamented by a few concentric lines. The para-anal setae are situated in a line with the posterior margin of the anal aperture.



Figs. 56-60. *Coleolaelaps boas*, n.sp.
Fig. 56 chelicerae female; fig. 57 tarsus II female; fig. 58 leg IV female; fig. 59 holoventral shield male; fig. 60 spermatophoral process on movable digit of chelicera male.

The setae on the ventral interscutal membrane are strongly-developed simple setae. The posterior pair are longer than the others.

The stigma is situated between coxae III and IV. The peritrematal plate is small and projects in the form of a slender process behind the stigma. The peritreme reaches anterior to coxa I. The tritosternum (fig. 53) has two long lacinae, provided with relatively long setules.

Gnathosoma. Oudemans (1925, 1927) has given a fairly accurate description of the gnathosoma in the genus. The hypostome with its conspicuously long ligula is illustrated in fig. 54. The tectum (fig. 55) is denticulated along its entire margin. The denticles on the anterior projection are smaller than those on the lateral margins. The chelicerae (fig. 56) are chelate-dentate. The fixed digit is multidentate by the presence of a row of small blunt teeth anterior and posterior to the large tooth. The movable digit has two large conspicuous teeth. The specialized seta on the tarsus of the pedipalp is two-pronged.

Legs. Leg I is thinner than the others. The claw on tarsus I is not well-developed. The setae on the legs are simple, spinelike or, as on tarsus II (fig. 57) spur-like. Leg IV (fig. 58) is provided with four long setae. Of these, three are on the tarsus and one on the femur. Femur II bears a similar long seta. In *C. rhinocerotis* tarsus IV bears only 2 long setae and the other setae on the legs are more strongly developed than in *boas*.

Male:

Dimensions:		
	Length of dorsal shield	693 μ
	Breadth of dorsal shield	429 μ
	Length of holoventral shield	572 μ
	Length of leg IV	847 μ

The dorsum is basically the same as that of the female. The median part of the venter is covered by a holoventral shield. The entire shield is reticulated as illustrated in fig. 59. It bears 9 pairs of setae excluding the para-anals and the postanal seta. In the holotype specimen one seta on the right side of the posterior portion of the shield is absent and the shield probably should bear 10 pairs of setae (excluding the anals). The lateral projections of the shield behind coxae IV, present in this species, are absent in the male of *C.rhinocerotis*. The spermatophoral process on the movable digit of the chelicera (fig. 60) is long and curved distally. The spermatophoral groove is very conspicuous. In the allotype male the movable digit is unidentate. Other features as in the female.

Hosts and localities. Holotype female, allotype male and 7 paratype females off *Oryctes boas*, Potchefstroom, October 1952; 4 paratype females off *Copris elphanor*, Potchefstroom, October 1952.

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